

What is claimed is:

- 1 1. An apparatus for locating on an optical fiber cable a fault where a
2 cable locating current is leaking to ground, the apparatus comprising:
3 a body adapted to be positioned adjacent the cable;
4 at least one voltage probe mounted in the body and positioned in the body
5 to probe the leaking cable locating current;
6 a reference voltage input for receiving a reference voltage; and
7 a voltage comparator electrically connected to the at least one voltage
8 probe and to the reference voltage input, the comparator configured for measuring a test
9 voltage between the reference voltage and the at least one voltage probe.
- 1 2. The apparatus of claim 1, wherein the body is further adapted to at
2 least partially surround a transverse section of the cable.
- 1 3. The apparatus of claim 2, wherein the at least one voltage probe
2 comprises a plurality of voltage probes angularly spaced around the transverse section of
3 the cable.
- 1 4. The apparatus of claim 1, wherein the at least one voltage probe
2 presents a conductive surface facing the cable.
- 1 5. The apparatus of claim 1, wherein the reference voltage is ground.
- 1 6. The apparatus of claim 1, wherein the reference voltage is a DC
2 voltage applied to the cable.

1 7. A method for locating on a cable a fault where a cable locating current
2 is leaking to ground, the method comprising the steps of:

3 positioning a voltage probe adjacent the cable;

4 applying a conductive medium between the cable and the voltage probe;

5 displacing the voltage probe along the cable;

6 measuring a voltage between the voltage probe and a reference voltage;

7 and

8 based on the voltage, detecting the fault at a position of the voltage probe
9 along the cable.

1 8. The method of claim 7, wherein the conductive medium is water.

1 9. The method of claim 7, wherein the conductive medium is a water-
2 based paste.

1 10. The method of claim 7, wherein the conductive medium is a gel.

1 11. The method of claim 7, wherein the voltage probe comprises a
2 plurality of conductive surfaces facing the cable.

1 12. The method of claim 11, wherein the step of positioning a voltage
2 probe adjacent the cable includes at least partially surrounding the cable with the voltage
3 probe.

1 13. The method of claim 12, wherein the step of displacing the voltage
2 probe along the cable comprises maintaining the probe in a position at least partially
3 surrounding the cable.

1 14. The method of claim 7, wherein the step of measuring a voltage
2 between the voltage probe and a reference voltage includes measuring a voltage between
3 the voltage probe and ground.

1 15. The method of claim 7, further comprising the step of applying a
2 reference DC voltage to the cable, and wherein the step of measuring a voltage between
3 the voltage probe and a reference voltage includes measuring a voltage between the
4 voltage probe and the reference DC voltage.

1 16. The method of claim 7, further comprising the step of sounding an
2 alarm when the fault is detected.

1 17. The method of claim 7, further comprising the step of initially
2 determining an approximate position of the fault by determining a position along the
3 cable where an above-ground detectability of the cable locating current degrades.

1 18. The method of claim 7, wherein the step of detecting the fault
2 comprises detecting a drop in the measured voltage.

1 19. The method of claim 7, wherein the step of detecting the fault
2 comprises detecting an increase in the measured voltage.